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JEP  
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H. Mull

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

James L. Foran

Appl. No.: 09/888,438

Filed: June 26, 2001

For: **Method and System for Presenting  
Three-Dimensional Computer  
Graphics Images Using Multiple  
Graphics Processing Units**

Confirmation No.: 9657

Art Unit: 2672

Examiner: Yang, Ryan R.

Atty. Docket: 1152.00

**Letter to PTO Draftsman: Submission of Formal Drawings**

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

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Submitted herewith are six sheets of formal drawings with Figure(s) 1-8, corresponding to the informal drawing(s) submitted with the above-captioned application. Identification of the drawing(s) is provided in accordance with 37 C.F.R. § 1.84(c). Acknowledgment of the receipt, approval, and entry of these formal drawing(s) into this application is respectfully requested.

It is not believed that an extension of time is required, other than any already provided herewith. However, if an extension of time is needed to prevent abandonment of the application, then such extension of time is hereby petitioned. The U.S. Patent and

James L. Foran  
Appl. No. 09/888,438

Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

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Sheet 1 of 6  
Appl. No. 09/888,438; Filed: Jun 26, 2001  
Dkt No. 1152.00; Group Unit: 2672  
Inventor: James L. Foran Tel: 202-371-2600  
Title: Method and System for Presenting Three-Dimensional  
Computer Graphics Images Using Multiple Graphics  
Processing Units

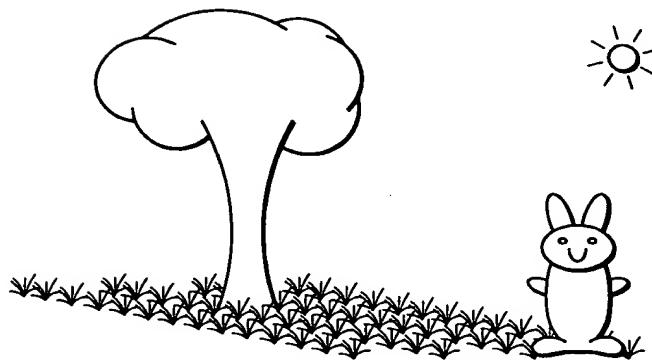


FIG. 1

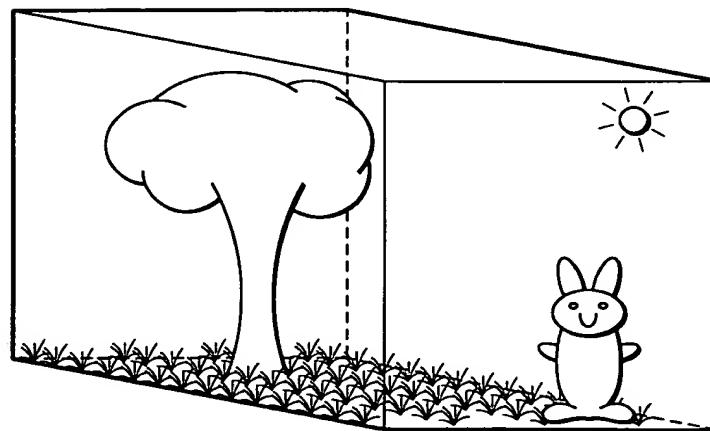


FIG. 2

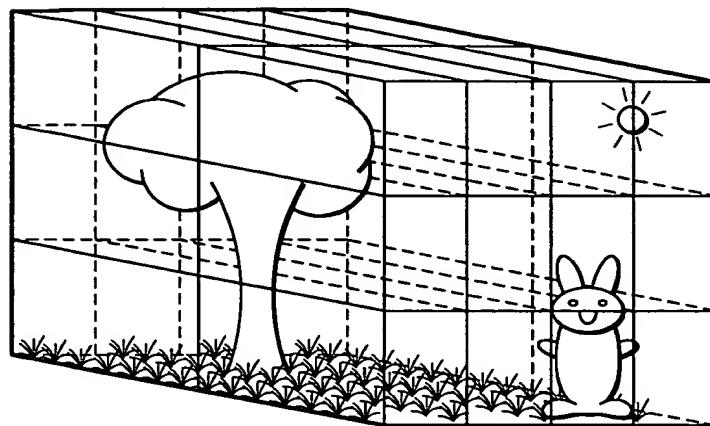


FIG.3

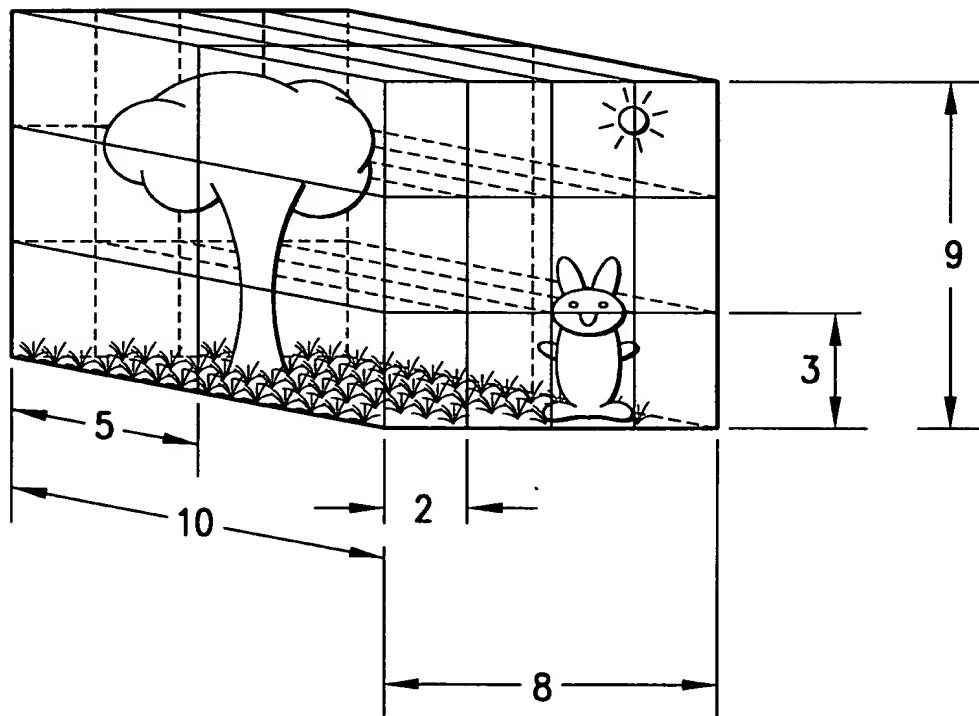


FIG.4



500

## METHOD FOR PRESENTING THREE-DIMENSIONAL COMPUTER GRAPHICS IMAGES USING MULTIPLE GRAPHICS PROCESSING UNITS

502

ALLOCATE, TO EACH GPU, 3-D COMPUTER GRAPHICS DATA SUCH THAT EACH ALLOCATED 3-D COMPUTER GRAPHICS DATA CORRESPONDS TO A PORTION OF THE SCENE THAT COMES WITHIN THE RECTANGULAR SUBVOLUME TO WHICH THAT GPU HAS BEEN ASSIGNED

DETERMINE THE VIEWING POSITION

504

COMMUNICATE THE VIEWING POSITION TO EACH GPU

506

508

RENDER, AT EACH GPU, ALLOCATED 3-D COMPUTER GRAPHICS DATA

510

ORDER RENDERED 3-D COMPUTER GRAPHICS DATA BASED ON LOCATIONS BETWEEN THE DETERMINED VIEWING POSITION AND EACH RECTANGULAR SUBVOLUME

512

BLEND, WITH AN IMAGE COMBINER, RENDERED 3-D COMPUTER GRAPHICS DATA

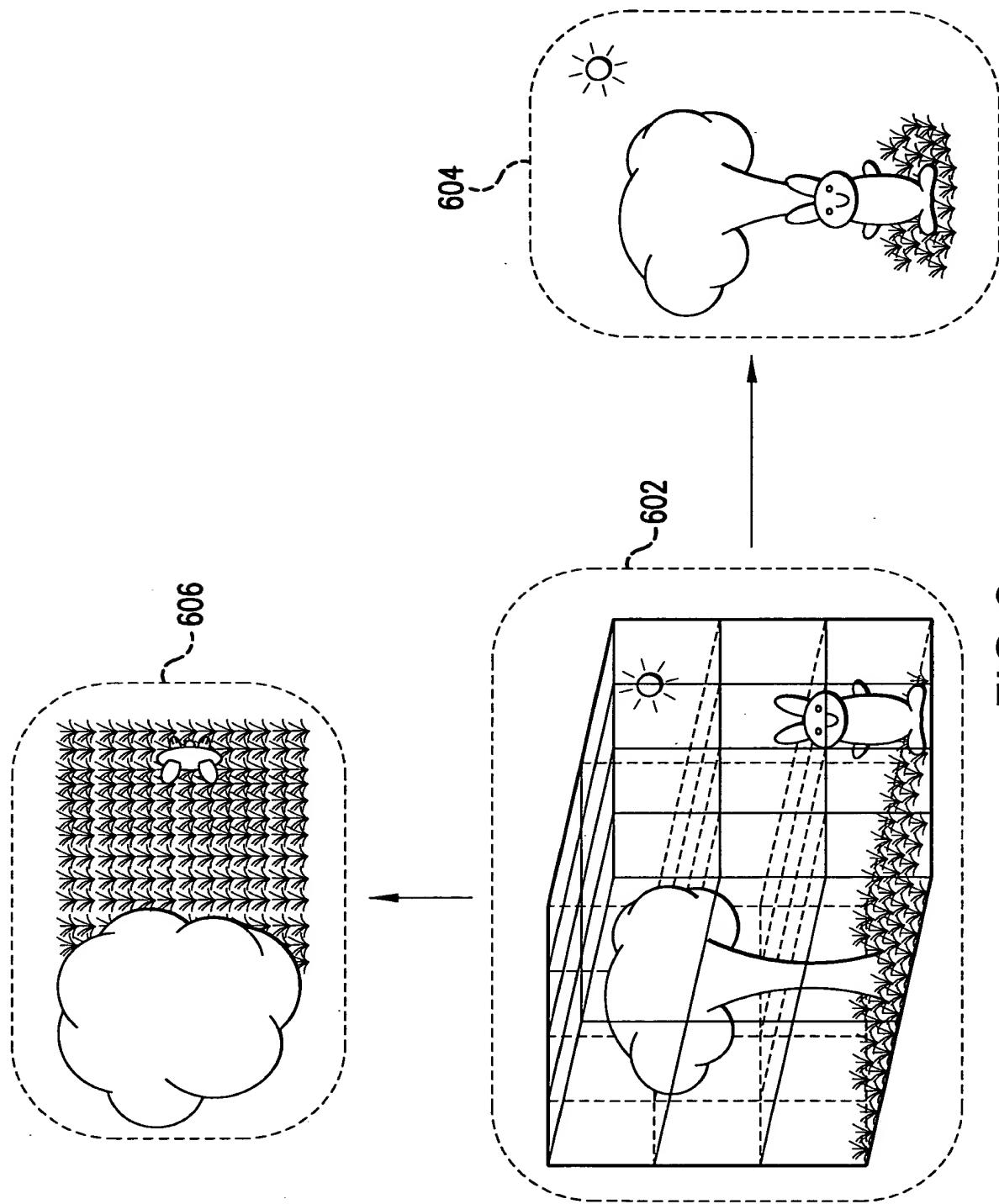
514

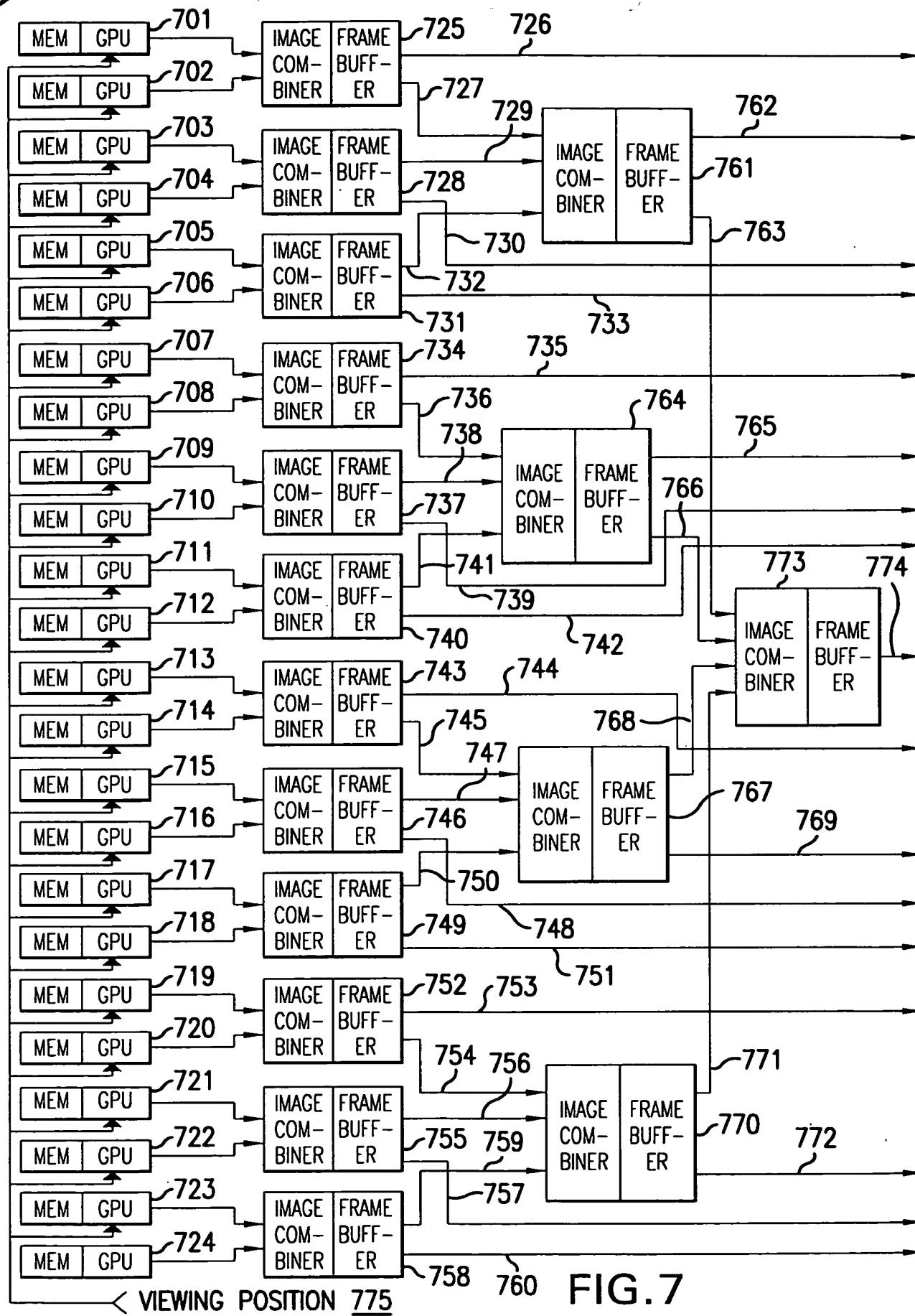
REPEAT STEP 512, AT SUBSEQUENT STAGES OF IMAGE COMBINERS, IF THE OUTPUT OF ONE OR MORE IMAGE COMBINERS IS AN INPUT FOR ANOTHER IMAGE COMBINER

516

PRESENT, FOR VIEWING, THE 3-D COMPUTER GRAPHICS IMAGE

FIG.5





VIEWING POSITION 775

FIG. 7

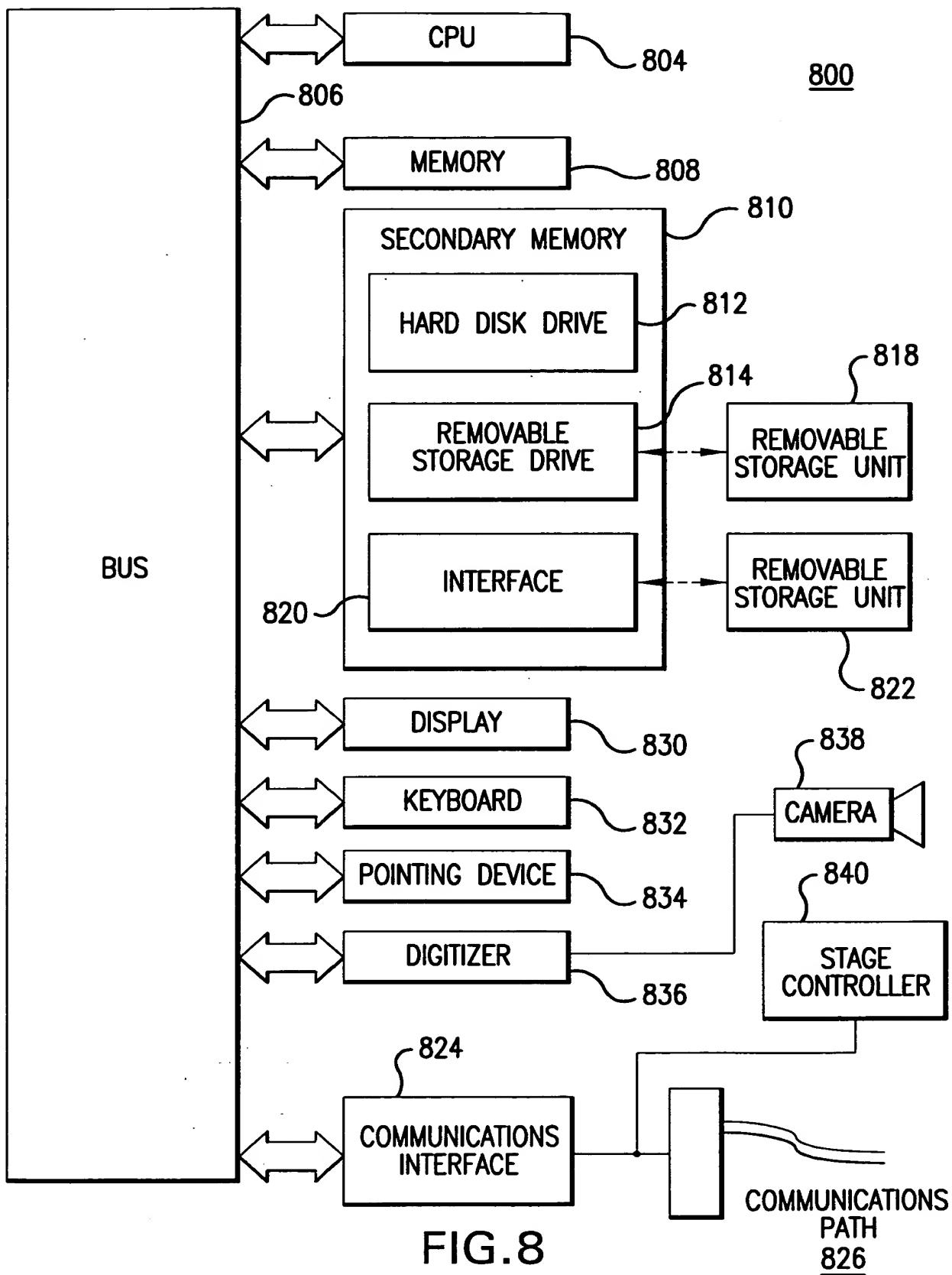


FIG.8